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ABSTRACT

This applied dissertation project was designed to improve communication systems among child care providers previously and currently enrolled in a statewide Child Development Associate (CDA) training program as a pilot project to promote communication among the statewide child care community as a whole. Communications systems within the CDA training program conducted on two-way audio, two-way video interactive television (ITV) throughout the state prevented students from collaborating fully with students at other sites, created problems with submission of assignments, limited support network development, and left camera-shy students and their perspectives unknown to students at other sites. At the program's end, enrolled providers had no cost effective and timely way to maintain communication and continue to develop a professional support network. The dissertation project involved the development of an online Internet Tutorial and an accompanying discussion board with an early childhood theme. Links to existing early childhood chat groups, discussion boards, and disability resources were provided. A face-to-face introductory computer/Internet session was developed that provided help for interested but inexperienced participants. The session included modules on discussion boards, listservs, downloading files, search engines, and netiquette. Evaluation findings indicated that widespread use of the discussion board was not evident; however, use of the tutorial resulted in individual users experiencing significant impacts in terms of connection to the early childhood community and access to resources. Users that benefited included both those who had home or work access to the Internet and those requiring public access to participate. (Six appendices include data collection instruments and data summaries. Contains 45 references.) (Author/KB)

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Developing Internet Communication and Peer Support in a Statewide Child Care Community for Participants in a Child Development Associate (CDA) Training Program

by
Steven Stahl
Cluster 2

An Applied Dissertation Presented to
the Ed.D. Program in Instructional Technology and Distance Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

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Table of Contents

Chapter I: Introduction 1
Description of Community 1
Writer's Work Setting 1
Writers Role 4

Chapter II: Study of the Problem 5
Problem Statement 5
Problem Description 5
Problem Documentation 7
Causative Analysis 9
Relationship of the Problem to the Literature 12
Non-participation of camera shy students 13
Inability to collaborate and develop support networks among care givers separated by distance 14

Chapter III : Anticipated Outcomes and Evaluation Instruments 17
Goals and Expectations 17
Expected Outcomes 17
Outcome 1 17
Outcome 2 17
Outcome 3 18
Outcome 4 18

Chapter IV: Solution Strategy 19
Discussion and Evaluation of Solutions 19
Restatement of the problem 19
Communication artifacts 19
Instructional methodologies and online communication issues 24
Overcoming shyness 32
Description of Selected Solutions 33
Report of Action Taken 37

Chapter V: Results 44
Results 44
Outcome 1 44
Outcome 2 45
Outcome 3 46
Outcome 4 46
Discussion 47
Further analysis of the data 47

Marketing 49
Gender and the Internet 51
Individual impact 52
Blending technologies into the CDA program 53
Unexpected outcomes and possibilities for the future 54
Recommendations 55
Dissemination 57

References 58

Appendices
A Initial Questionnaire 62
B Library Survey Instrument 66
C Tutorial Screen Captures 69
D Announcement of Basic Computer Training Opportunity 77
E Tutorial and Discussion Board Announcement 79
F Final Questionnaire 81

Figures
1 Section of Discussion Board Showing Threading By Indenting 22

ABSTRACT

Developing Communication and Peer Support in a Statewide Child Care Community for Participants in a Child Development Associate (CDA) Training Program. Stahl, Steven: Applied Dissertation, Nova Southeastern University, Ed.D. Program in Instructional Technology and Distance Education. Learning Communities/ Community Development/ Computer Mediated Communication/ Professional Development/ Interpersonal Communication/ Communication/ Group Discussion/ Online Tutorial

This applied dissertation was designed to improve communication systems among child care providers previously and concurrently enrolled in a statewide CDA training program as a pilot to promote communication among the statewide child care community as a whole. Communications systems within the CDA training program conducted on two-way audio, two-way video interactive television (ITV) throughout the state (a) prevented students from collaborating fully with students at other sites; (b) created problems with submission of assignments; (c) limited support network development; and (d) left camera shy students and their perspectives unknown to students at other sites. In addition, at the program's end enrolled providers have no cost effective and timely way to maintain communications and continue to develop a professional support network. This inability to develop a professional network with peers is mirrored in the statewide child care community.

The writer developed an online Internet Tutorial with an accompanying discussion board with an early childhood theme. Links to existing early childhood chat groups, discussion boards, and disability resources were provided. A face-to-face introductory computer/Internet session was developed and held for interested but inexperienced participants. The tutorial was targeted to a beginner level as an introduction to the Internet and included modules on using discussion boards, chat, e-mail, listserves, downloading files, using search engines, netiquette, etc. An analysis of the data revealed that widespread use of the discussion board was not evident, however, use of the tutorial resulted in individual users experiencing significant impacts in terms of connection to the early childhood community and access to resources. Users that benefitted included both those who had home or work access to the Internet and those requiring public access to participate.

Chapter 1: Introduction

Description of Community

The community in which this applied dissertation was implemented was throughout a mostly rural New England state. The state covers 9,600 square miles and has an estimated population, as of July of 1996, of just under 600,000 (U.S. Census Bureau, 1997). The state is studded with mountains, rivers, and valleys which contribute to serious travel problems, especially during the long and severe winters. Sixty-seven percent of the population lives in rurally designated areas, the highest percentage of any state (Wiberg, K., personal communication, August 23, 1993).

Writer's Work Setting

The organization in which the writer's training program is based is a non-profit entity with multiple components designed to serve families and children primarily within the county in which it is located. The Child Development Associate (CDA) component in which this applied dissertation was originated is the only statewide program within the agency. The agency is well established in the community as it has existed for over 30 years, originally as a department of a local university. In 1994, the agency separated from the college and became a separate entity. Best known for its preschool and after school programs in the immediate surrounding community, it is also known to the larger statewide child care community as a result of a strong and consistent commitment to collaboration with other agencies. Collaboration is a central concept to the agency's mission statement.

The mission statement reads:

> The (agency name), through collaboration with other human service and education agencies, supports the growth and development of children, families and service providers, empowering them to take active and self-directed roles in their own development by focusing on prevention and long term outcomes.

The CDA program in which this applied dissertation was originated was funded through a three year grant from the U.S. Department of Education, Office of Special Education. Alternative local funding sources were secured for continuation of the program beyond the 1997-98 academic year.

The CDA component provides intensive child care training with an emphasis on helping child care providers and home visitors receive the nationally recognized CDA credential. The program was designed to help enrolled CDA candidates (a) promote positive attitudes towards integrating infants, toddlers and preschoolers with disabilities into regular child care settings; (b) to develop a broad knowledge base about specific disabilities and chronic health conditions and accommodations; (c) to identify the availability of professional resources including health care providers and special education personnel; and (d) to use developmentally appropriate practices for working with all children birth to five including those with disabilities.

The program, which continues to function, consists of three undergraduate level courses: (a) Early Childhood Care and Education: Birth to Five - 3 credits, (b) Introduction to Early Intervention - 3 credits, and (c) Field Experience (at the students work site) - 4 credits. Students attend a total of 28 classes over two semesters. All but two of those classes take place through a network of compressed video, two-way audio and two-way video interactive television (ITV) studios around the state. Each year five of 12 available sites are selected. Course enrollment

and credit is arranged through a collaborative agreement with the state's community college system.

The program is unique for the region as it is the only early childhood training program in the state that is conducted using ITV. In addition, there are no other intensive non-degree early childhood programs currently offered statewide. Another unique quality of the program is its emphasis on training early childhood paraprofessionals to serve infants, toddlers and children with disabilities.

Staff of the CDA component during the period of this project consisted of the Training Coordinator (100% FTE), a part time Teaching Assistant (20% FTE), a part time Administrative Assistant (25% FTE), and the Executive Director (10% FTE). The coordinator during the first three and a half years was also the instructor.

The population this training program serves has consisted to date of between 27 and 34 students per year for a total 122 students over a four year period including the current year. Students enrolled must work in a licensed center-based preschool, a licensed center-based infant/toddler facility, a registered family day care, or a home visitor program to be eligible to participate in the program. In order to be accepted to the program, students must demonstrate adequate reading and writing skills to complete a college level course of study, have a commitment to the child care field, be interested in learning about serving children with disabilities, and be willing to commit to the high level of work required by the program.

All student's tuition was subsidized during the period of the federal grant, with 27 of 34 receiving full scholarships in the third year. During the forth year students were asked to contribute to their tuition on an ability-to-pay basis (non-documented). To date all but three

participants have been female. This ratio is typical of the child care field in general in the state. Experience levels of the participants entering the program has varied from three months in child care to in excess of 20 years serving children and families. The majority of students have little or no college experience, however, several students have had associate, bachelor and in one case masters degrees in areas other than early childhood.

Writers Role

The role of the writer for this applied dissertation, as both course instructor and program coordinator, was to implement a solution to improve communication systems among enrolled child care providers, previous graduates of the program, and others in the child care community around the state. The short term goal was to improve communication systems amongst the CDA program student population. The long range goal was the development of a tutorial and communication system that could remain in place beyond the end of the program and be available to all child care providers and staff around the state to use and participate.

Chapter II: Study of the Problem

Problem Statement

The problem that was to be solved during this applied dissertation was that communications systems within the Child Development Associate (CDA) training program conducted on compressed video ITV throughout the state (a) prevented students from collaborating fully with students at other sites; (b) created problems with submission of assignments; (c) limited support network development; and (d) left camera shy students and their perspectives unknown to students at other sites. In addition, at the program's end enrolled providers have no cost efficient and timely way to maintain communications and continue to develop a professional support network. This inability to develop a professional network with peers was mirrored in the statewide child care community.

Problem Description

There were numerous indications of communication difficulties. Students frequently commented that they wished that the class could be held with all participants together in one classroom, indicating a wish for more personal communications. A desire to maintain contact with classmates after completion of the program had also been expressed by many students, yet no solution was identified by the students to make this possible.

Students had expressed to the instructor that there was not enough time to discuss many of the issues that arose in class. Though a great deal of dialogue was required and encouraged by the instructor, there was not additional class time available to extend discussions on the multitude of relevant issues that arose.

Another concern was that camera shy students remained relatively unknown to students at other sites and did not contribute to the shared learning in the large class discussions. This invisibility occurred as a result of the way the ITV system works. In order for an individual to be seen by another student or the instructor at another site, they must talk. When an individual speaks at a site, the technology automatically switches what is seen by remote sites to that site. Simultaneously a technician located at the local site selects a camera and aims it towards the individual speaking. If one does not contribute, then one is rarely seen.

Although all students demonstrated good participation in small group activities, some students remained uncomfortable speaking into the microphones and talking in front of the ITV cameras. The result was that students at other sites, for the most part, were unaware of their existence. In addition, the questions, insights, and perspectives that these quiet students could offer were not shared with the rest of the class. This training program is highly dependent on a collaborative learning and uses a distributed cognition model of instruction where participants are expected to construct meaning for themselves from social discourse. Having students that do not contribute may result in a significant loss to the potential learning of the rest of class.

Another problem was that each semester some homework sent through the post office was either significantly delayed or never arrived. When homework was late to arrive in the instructor's mailbox, then students were not able to receive timely feedback on their assignments. This was particularly troubling in situations where students needed to receive feedback on one task before proceeding to the next assignment. Paulsen (1995) states that "extended turnaround times may have destructive effects on course completion" (p.7). When

homework was lost, it created similar problems, and caused students to need to resubmit work already completed.

Problem Documentation

Considerable evidence existed to document the problems listed in the previous section. Students were given regular end-of-year anonymous evaluations to complete. In these evaluations, students responded to statements from a choice of responses: "strongly disagree", "disagree", "agree" or "strongly agree". In response to the statement, "I felt like I was part of the class, including other sites" 28% of those responding (n = 21) disagreed, while only 33% of the class strongly agreed. In response to the statement "The fact that I was 'on TV' did not inhibit my class participation" resulted in 28% disagreeing and only 10% strongly agreeing.

In addition to responding to statements, there were also open-ended questions and space for comments. Responses in this section included student suggestions for "more encouragement to quieter students to speak up." This illustrated that students perceived the existence of the problem and desired more active participation from the shy students. A review of video tapes of the session revealed that there were numerous students who either rarely or never contribute in large group discussions.

Over the first three years of the program several quiet students had conversations directly with the instructor. In one case a student drove a hour and a half on a weekend to meet with the instructor to explain her discomfort with speaking in front of the camera. She reported that she would "break into a cold sweat" before coming to every class. Other students who were not contributors to large group discussions had discussions with the instructor and also wrote comments in end-of-year evaluations regarding their inability to overcome their discomfort of

speaking in front of the camera. Informal evaluations collected anonymously at the end of several classes also had a few comments about not being able to overcome the apprehension of speaking in front of the camera.

Overall, students repeatedly expressed themes of shyness of microphones and cameras, not enough personal contact, wishing to be together as one group, and a feeling of a lack of social contact with students at other sites in their discussions and written evaluations. In addition, several students expressed a desire to have more awareness of quiet students at other sites.

There were class discussions regarding peer attempts to get quiet students to participate in large group discussions. Some students reported on their efforts to provide support and encouragement to the trepidatious students.

At the end of the first year of the program, the subject of how to keep in touch with each other came up during three different video taped classes, yet no solution was ever suggested. The instructor remains unaware of any efforts made by students to maintain class wide connections despite numerous contacts with many students after the program ended. At the end of program year two, there were 53 program completers from year one who had no viable way to communicate with the other distant participants on a regular basis.

A review of the literature indicates the importance of developing peer support networks (Larner, 1993; Stone, 1991), and social networks (Atkinson, 1988), particularly in the field of child care, due to its isolating nature (Larner, 1993). It is clear from the evaluations, discussions in class and discussions that students had with the instructor that the ITV system, in conjunction with the barriers created by distance was preventing these support networks from developing.

The issue of mail delivery problems resulted in the filing of a complaint with the U.S. Postal Service. On two occasions, mail took 12 to 14 days to arrive at the instructors site from less than 75 miles away. On two other occasions, mail failed to arrive at all. In one situation, stamps fell off the package which caused a delay in delivery and postage being due. Causes for most delays are unknown.

Causative Analysis

The technological nature of ITV and the fact that students are separated from each other and the instructor by mountains and valleys, and travel distances of up to 170 miles was a fundamental cause of the numerous communication difficulties within the CDA program. Even students who attended the same ITV studios often lived over an hour and a half from one another. Distant telephone service is very expensive and was a barrier not easily overcome.

Communication via television made some students overly self-conscious and reluctant to participate in class. This was determined through a review of evaluations, video tapes of class discussions, and consideration of the content of conversations between students and instructor regarding communication issues. A review of the literature on shyness was also conducted. The results of the writer's investigation indicated that removing the ability of the students to see themselves on the television could be beneficial to supporting participation among shy students. During year two, the instructor directed the technicians to turn off the local monitor at one session. Some students later reported that it was more comfortable for them. During the third year, local monitors were not turned on except at the site that the instructor was located. It was necessary to keep on the local monitor where the presenter was originating from in order for students to be able to see overheads or information presented from the instructors lap top

computer. Some students expressed to the instructor, appreciation of having the local monitor turned off at their sites and discomfort at having the monitors on when the instructor was at their site.

Students who did not participate in large group discussions remained relatively unknown to students at other sites because there was no other means of communication used within the instructional format. Consideration was given to numerous factors. The limited amount of time available for large group discussions limits the amount of participation possible by individual students. With class size up to 34 students and there simply is not adequate time available for all students to contribute to each discussion every week. In addition the inability of small group discussions to be quickly and reliably established between multiple pairs of distant groups of students simultaneously limited the peer-to-peer interactions between sites during small group activities. This was a limitation of the ITV system being used.

On two occasions over the nine month program, students were required to meet in a central location for class. This amount of together time, however, was not sufficient to overcome the invisibility of some students. The writer's impression is that the large group assembled together seems to be another obstacle to overcome for the shy students. The fact that some students remain unknown to others at distant sites appeared to be unavoidable without other means of communication given the large group size, infeasibility of having more classes where all students can meet together, and the communication difficulties that the distance between both instructional sites and individual students created.

Many students felt that there was insufficient time to discuss subjects with each other. The writer feels that this was due to the class being highly structured with only limited time

allotted to a given subject each week, and because students had no way of continuing the discussion in successive weeks or between classes. Given that in most cases distances were great between students, use of telephone was too costly for long discussion and use of mail was not timely nor fully dependable. In addition, neither of these modes of communication allowed for group discussion where many voices could contribute.

The writer came to these conclusions after student comments in reflection papers and evaluations, and instructor/student conversations were considered. In addition, the curriculum was examined to determine if extra class time could be freed up, however, the instructor did not feel that enough time could be allocated to free discussion to make a difference. It was clear, however, to the instructor that given the opportunity, many students would enjoy and benefit from opportunities for longer or continued discussions on subjects related to class discussions. It was also the writer's opinion that many of the program graduates as well as other early childhood care givers and staff around the state would benefit from an opportunity to engage in discussions about child care with their peers.

Support networks occurred within sites and to a lesser degree during class across sites, but a continuation and development of a long term support network was not possible because, as previously stated, the cost of maintaining contact via telephones, and mail is not convenient or timely. There are also numerous local child care support networks that have developed around the state, however, many licensed center and registered home providers in the state do not attend meetings, workshops or conferences due to travel distance and inconvenience (Krauss, 1993). The high cost of long distance telephone service was a particularly strong obstacle when one considers the low wages that dominate the child care field (Child Care Services Division, 1996).

The conclusion of the writer's investigation was that a strong motivation existed to develop a support network amongst the current and previous members of the class (this was illustrated in discussions in class and evaluations), yet no documented connections occurred as there was no means previously available that were cost effective and convenient to the students. A statewide survey indicated that approximately one third of all child care providers in the state found support groups as a positive experience (Krauss, 1993).

The problem of submission of assignments and return of assignments by the instructor being less than fully reliable was due to a combination of problems, both due to the U.S. Post Office and from difficulties in getting homework posted in a timely manner. The writer reviewed the times when homework was not delivered quickly and identified the following causes: (a) a student failed to post the homework immediately after class, (b) a technician occasionally failed to post the assignments immediately after class, (c) mail rooms at ITV sites were sometimes closed for school vacation causing mail not to be received at sites, and (d) mail was delayed or lost in the U.S. postal system (usually without cause being able to be determined). On one occasion, it became evident that most of the stamps had fallen off the envelope when the mail arrived late with significant postage due.

Relationship of the Problem to the Literature

The problem identified can be divided into three categories of communication difficulties. These are (a) non-participation of camera shy students, (b) inability to collaborate and develop support networks among care givers separated by distance, (c) delay or loss of homework materials. Links to the literature will be discussed below for problems (a) and (b).

Non-participation of camera shy students.

Numerous students had some level of difficulty adjusting to the use of the cameras and microphones. For most students initial discomfort dissipated quickly. There were, however, some students whose difficulties with speaking to the group were sustained over the full length of the course and thus, they were never able to be comfortable contributing or otherwise participating. For students with communication difficulties (seen as shyness), viewing onself on video (as is the case in a compressed video environment) tends to magnify communication difficulties, thereby creating additional difficulties in communicating (Kinzer, 1985; Woody, Chambless, & Glass, 1997). In the ITV environment used for the CDA program, each site had multiple monitors. On one monitor was a view of what remote sites saw when the picture from the local site is broadcast, usually a close up of the person speaking. A second monitor displayed the image from the active or most recently active remote site. All sites had several pairs of monitors around the room. The resulting effect was that when one spoke, the local monitor shows a close up, larger than life, image of the contributing student. According to Kinzer (1985) seeing oneself on video tends to focus the attention of the viewer on his or her self and magnify preexisting communication difficulties. This in turn may increase the individual's fear of communication and strengthen the already held negative self-images.

Woody, Chambless, & Glass (1997) conducted studies of the effects of a cognitive behavioral treatment for individuals with social phobias. They concluded that there was a strong correlation between decreases in self-focus and anxiety about public speaking. They reported that the frequency of negative self-judgements also decreased when self-focus was lessened.

Inability to collaborate and develop support networks among care givers separated by distance.

In the statewide CDA program, approximately 30% of current and prior child care providers enrolled ran their own family child care, 60% were center based preschool or infant/toddler care givers, and 10% were home visitors. Many of the centers were small operations which in some cases were operated out of the director's home or adjacent building.

Of these four categories of child care, family child care providers are the most isolated. This group's isolation is documented extensively in the literature. Information received on applications to the CDA program have indicated that these care givers may work an average of 50 to 60 hours per week. Since they work out of their homes by themselves and maintain long working hours they frequently have little or no contact with other child care providers. Family child care providers are "isolated in their work environment on a disproportionate basis" (Wetherington 1996, p.7). There is a conflict in this situation, however, as in studies of family child care training programs, Atkinson (1988) found that the development of peer relationships was of key importance to the success of the programs. "Family day care providers are isolated in their homes by the very nature of their work, and the importance of giving them access to an ongoing source of support has long been recognized" (Larner, 1993, p. 9).

Those working in centers are often in a similar though not as severe isolating situation in that there is very little time available when children are not present for teachers to collaborate, plan, and discuss issues. Since many of the programs in the state in which the CDA program took place are small centers, there were a limited number of individuals present for networking and sharing a diversity of experiences.

On a cautionary note, Larner (1993) notes that a network for providers may result in rejection by the providers if the agency involved attempts to assert too much control. When an agency places restrictions and rules on the network, there is a perception among many providers, that their independence is compromised. Many individuals who operate family child cares entered the profession attracted by the desire for independence (Larner, 1993). This makes many providers uncomfortable with agency led networks (Larner, 1993). "Most providers are entrepreneurs who operate independently, and that trait makes many of them impatient with agency-operated systems that direct and control their work" (Larner, 1993, pp.35-36).

The development of a network for the purpose of peer support is often considered by participants to be more important than communications for the exchanges of facts about a topic (Larner, 1993; Stone, 1991; Slatalla, 1996). In a study of nurses studying for professional license exams, 72% of the students ranked dealing with stress as very important support activity within the network, higher than content needs. Peer support was ranked by participants as the most valuable aspect to the network (Stone, 1991). In 1989 a computer network was established for Alzheimer's patients' care givers (usually their spouses or children) with the primary goal of offering medical assistance. The designers of the network were quite surprised, however, to find that the participants used the access to medical advice infrequently, yet accessed the system constantly for peer support. "From day one, the care givers were dialing in to talk to each other, craving communication so persistently that they would endure two hours of busy signals waiting for a Free-Net phone line to open"(Slatalla 1996, p. 184). The community that developed was so strong that one woman contacted her computer family before she called anyone else to tell them when her husband died (Slatalla 1996). "They were most interested in the peer-to-peer

communication.... We didn't expect their range of conversations, the topics, the fact that they talked about things that are a part of their lives. Weddings. Funerals. Gardens" (Slatalla 1996, p.184).

Larner (1993) discussed the importance of networks to family providers, "Many considered the network as part of their families. Networks connect providers to the outside world, reducing the isolation that is inherent in working alone at home" (p.27). From the literature, the writer concluded that the reason participants of networks value peer support more than fact transmission appears to be due to the high isolation of the groups examined and the resulting overarching need for general communication with peers who are dealing with similar situations.

The writer feels that the existence of high isolation and the need for general communication among targeted care givers is clearly established and that a system that provides an opportunity for these care givers to communicate freely would be a great benefit to the current and prior CDA students as well as to the child care community at large. It from this assumption that the goals in Chapter III were established.

Chapter III : Anticipated Outcomes and Evaluation Instruments

Goals and Expectations

The purpose of the writer's applied dissertation was to improve statewide communication systems among current and prior CDA credentialed child care providers and CDA candidates to allow for the development of a peer-to-peer support network and a learning community, without regard to distance. A long term goal was to provide this opportunity to all child care providers statewide.

Expected Outcomes

The following outcomes were projected for this applied dissertation:

Outcome 1.

Participants separated by distance will maintain contact during the applied dissertation and develop peer support communities. Communications will be monitored and an end of year survey will be completed by participants. A minimum of biweekly communication by 85% of students during the program, and an intention indicated by 75% of participants to maintain a support network with members of the group in program and will be considered a success.

Outcome 2.

Camera shy students from the current class will have interactions with, become known by, and share their perspectives with students at distant sites. An analysis will be done of online program volunteers to compare degree of self-reported camera shyness (current or in previous years of the CDA program) with frequency and type of interactions both on camera and through other means of communication developed. At least one method of communicating with participants from other sites on a minimum of a biweekly basis during the applied dissertation

will be documented for at least 90% of students who identify themselves as uncomfortable with the camera.

Outcome 3.

Participants will develop support networks with participants from other regions of the state. Participants will be asked to report on all communications with distant participants. Results of participant and instructor documentation will indicate at least biweekly communications by 85% of the students with students at a distance sites, excluding classroom conversations (for those in the current CDA class).

Outcome 4.

All students in the current CDA program will have the ability to submit most homework without reliance on others for delivery, thus creating less opportunity for assignments to be lost or delayed in the mailing process. The number of students submitting homework directly to the instructor will be tabulated. 50% of students who participate in this applied dissertation using a direct method of submission of homework will be considered a success.

Chapter IV: Solution Strategy

Discussion and Evaluation of Solutions

Restatement of the problem.

The problem to be solved in this applied dissertation was that communications systems within the Child Development Associate (CDA) training program conducted on compressed video interactive television (ITV) throughout the state prevented students from collaborating fully with students at other sites, created problems with submission of assignments, limited support network development, and left camera shy students and their perspectives unknown to students at other sites. In addition, at the program's end enrolled providers had no cost efficient and timely way to maintain communications and continue to develop a professional support network.

The writer explored the literature for possible solutions to the above stated problem. Numerous potential solutions were reviewed. Solutions from the review are discussed below, followed by a discussion of the solution strategies that the writer has selected.

Communication Artifacts.

Support networks can be developed using online technologies including e-mail (Manning, 1996; Rowland, 1996), a mailing list (often referred to as a "listserv") (Paulsen, 1995), bulletin boards (Rowland, 1996; Paulsen, 1995; Fjuk, 1997a; Sorensen, 1994), and synchronous chat (Rapaport, 1991). The use of these communications systems can overcome the barrier of distance that is present in the CDA training program. Howard (1996) states "In some cases technology can provide quite simply the difference between access and exclusion" (p. 172). Each of these artifacts of online communication are discussed individually below.

Use of E-mail can be an effective medium of communication in conjunction with a distance education program (Paulsen, 1995). E-mail allows individuals to post and receive messages asynchronously through any computer that has an Internet connection. For participants to use e-mail, they needed to establish an e-mail account either through a fee for service Internet service provider (ISP), or through a free e-mail company. E-mail can be used by individuals who are isolated by distance and work to provided needed support (Rowland, 1996). The writer felt strongly that e-mail access would be an important part of implementing the solution. He has researched free e-mail service and established an account in order to explore the service that is provided. He found that the service is more than adequate for individuals who do not have a home computer and would not wish to incur the monthly fees for a commercially available ISP.

Another Internet communication tool is an Internet mailing list (often referred to incorrectly as a "listserv" which is a proprietary name). An Internet mailing list is similar to e-mail, except that individuals "subscribe" to a Internet mailing list. Once an individual's name is added to an Internet mailing list, he or she receives as e-mail copies of everything that anyone else on the Internet mailing list e-mails to the list. An Internet mailing list is usually organized around a particular topic or for an instructional program. It becomes an effective discussion forum as well as a way for individuals to post notices to all others on the Internet mailing list. An Internet mailing list can be an very effective communication tool for daily distributed communication. One of the drawbacks of an Internet mailing list is that when numerous individuals engage in a dialog, many e-mails may be received by each individual on the list. Students who do not have daily access to their e-mail may be overwhelmed by the number of messages waiting for them after a lapse of a week or so.

In this program, many participants needed to access a computer out of their home. Access may have been as infrequent as once every two weeks or longer. This creates a situation where students may find that they do not have the time to read all the messages waiting for them. Also, responding to messages that may be a week or two old can create discontinuity in ongoing discussions.

It was the writer's opinion that an Internet mailing list was not a good choice as a required communication artifact for this program, however, participants were provided with an online tutorial and information about various relevant Internet mailing lists. Some students with regular computer access choose to participate in an already existing early childhood Internet mailing list.

Another form of asynchronous electronic communication is a discussion board. A discussion board provides a good opportunity for participants to participate over an extended period of time (Paulsen, 1995). Yet unlike an Internet mailing list, messages are not sent to an individual's e-mail address. Instead, participants post messages to a message board and provide a title that describes the content of their post. When another discussion board user want to view messages that have been posted, he or she logs on to the Internet and enters the discussion board address (called a URL) in an Internet navigator such as Netscape or Microsoft Internet Explorer. The discussion board screen will show the titles of each article or post as well as who posted the message, and the user then may choose to open posts with topics that are of interest. In addition, topics are "threaded" so that a user can respond to a particular message and that response will be posted directly below the original post but indented several spaces to the left. In figure 1, topics are underlined.

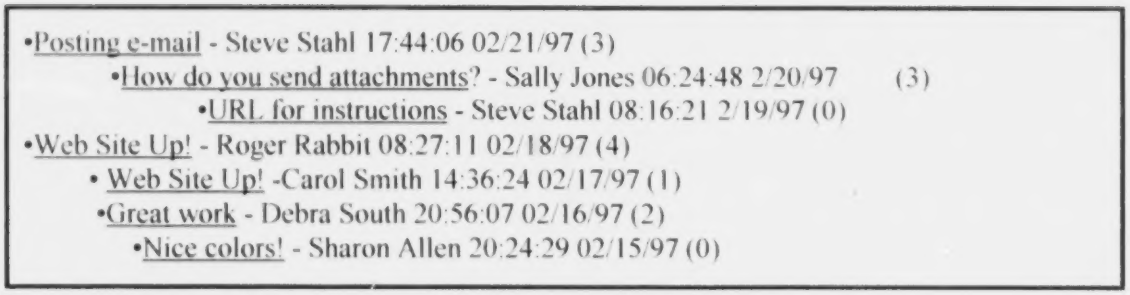

Figure 1. Section of discussion board showing threading by indenting.

Students in the CDA program as well as others in the early childhood community have very different work schedules and family responsibilities. The writer believed that the use of a discussion board would likely be very accessible and appealing to all current and previous students. Bannon (1995) states, "Part of its appeal is that members (of Internet discussion groups) believe themselves to belong to a community of fellow-travelers" (p.275). The author believed that a discussion board system would be an essential communication tool for this program. Research has shown that students may find it less intimidating to share their feelings and thoughts online than in a face-to-face type of environment (Paulsen, 1995; Fischer, 1996). This particular artifact seems very suited for this task.

There are other forms of Internet communication that require users to be online at the same time and provide for synchronous communication. One such artifact is Internet Relay Chat (IRC).

IRC is most similar to real time telephone conferencing and can be an excellent communication tool. The difference is that communication takes place through typed text as opposed to voice transmission. Despite the obvious benefits of real time communication, the author believes that the use of IRC in this program would be very limited due to the varied and

full schedules of the program participants, the necessity of many students to access the Internet outside of their homes, and the necessity of students being on-line at the same time in order to share ideas and dialogue.

The writer, therefore did not see IRC as an effective artifact in this situation, though individual students with home access may choose in the future to use this technology independently.

There are other forms of communication that are available that offer both audio and video connections between individual. However, few if any students would have access to the state-of-the-art equipment that would be required to reach this level of communication.

The use of online technologies should be used for the development of a social network of support among early childhood care givers in order to promote the success and longevity of individuals in the child care field (Larner, 1993; Lyness, 1992). In a program in Utah, funded by the same federal funding source as the writer's program, technology was used successfully to train early intervention personnel; "The promise of technology for preparation of early intervention personnel is great" (Rowland, 1996, p.71). Since the applied dissertation took place in a state that has one of the highest percentages of people living rurally of any state, the continued development of a support network may be valuable not only for professional support, but also support to help some of the students struggling with balancing the workload from the training program with the responsibilities in the rest of their lives. The development of a support network was considered by the writer to be a key element necessary for the success of the applied dissertation.

Instructional methodologies and online communication issues.

Since the technologies are only the medium for communication, consideration needed to be given to selecting instructional methodologies, and facilitation methods for use with each technological artifact chosen, to promote the development of support communities and learning networks (Rowland, 1996; Fjuk, 1997a; 1997b; Fischer, 1997; Marmolin, 1991; Bannon, 1995; Rowland, 1996; Stammen, 1995). The following literature review discusses issues related to the integration of the technologies addressed above.

The use of technological artifacts of communication have created a need for adaptation of ways in which participants communicate. Since users can not use the normal visual or auditory cues that would be present in a face-to-face meeting or telephone conversation, additional means of sharing information become necessary. In addition, discussion groups are often centered around a particular topic area and each content area may require knowledge of a specialized language. Participants should be taught the language of the communities in which they wish to join whether it be a discussion board system, Internet mailing list or other form of communication (Bruffee, 1993; Marmolin, 1991). For example, in the field of early childhood special education, individuals should know such terms as inclusion, early intervention, interdisciplinary approach, etc., as well as abbreviations such as PT, OT, and IEP (physical therapist, occupational therapist, and Individual Education Plan). Without knowledge of the special language of the field, individuals may find themselves not able to communicate in some online dialogues.

In this program the community in which the participants initially joined was made up of other child care providers and/or home visitors, many of whom have been or are currently

participants in the CDA training, thus, the language that was shared was already familiar. The writer therefore, did not feel that attention to this particular strategy was necessary.

Since the regular cues that occur in face-to-face communication are not present, students needed to understand that they would have to make a deliberate effort to explain their use of language (Roschelle, 1995). Since most if not all of the participants in this program had considerable practice within the ITV system clarifying their intended meaning to other students, the writer did not feel that attention to this particular strategy was necessary.

Though a community is developed to some degree as part of the ITV program, there is still a lot of community building to be done. Participants must be encouraged to become a part of the community by becoming knowledgeable and skilled. Similarly, encouragement should be given to students to become knowledgeable and skilled through the participation in the community (Lave, 1991). The students who have participated in the CDA training program have chosen to take part in the program primarily to develop their own knowledge and skills and have frequently expressed appreciation at being able to communicate with so many of their peers at class. It appeared to the writer that there was a natural tendency in the group to support each other's learning through a learning community.

Student input into the types of problems to be solved (online) should be encouraged to promote the development of creativity, engagement and motivation (Fjuk, 1997a). The level of engagement, creativity, and motivation in current class activities (especially in small groups) is very strong because of the direct application of the materials to the student's work sites and student input into the problems to be solved. The writer felt that the key elements above were

already present in the classroom process and this should have transfer easily to an online environment.

Howard (1996) suggests that assignments that support problem solving and consensus building can be used to develop a social community and promote development as a professional. Since the discussion board was incorporated into the course, specific assignments were not integrated into this project, however, at a later date consideration will be given to including use of the Internet in future years of the CDA training program.

Team building and a learning community are strengthened when students are encouraged to reflect on their assumptions of what other's with whom they are communicating with know and understand (Krauss, 1991) as well as reflect on the group's processing (Senge, 1990). The students in the CDA class were newcomers to the concepts of teaming and the importance of process in collaborative efforts. Prior program completers may have more experience as result of being more connected to the early childhood special education community. Only one class in the CDA training program was devoted to the concept of teaming. The author believed that attention to instilling a reflective aspect to students' participation in online communications would be beneficial.

Online etiquette is yet another issue that deserved some attention when introducing new Internet users to the Web. Numerous posts to the early childhood education Internet mailing list, ECENET-L (ECENET-L, 1997) over a several week period indicated a strong consensus that instruction should be provided about online etiquette to new users of a discussion board. This issue was passionately discussed after a dispute arose between a new list subscriber and a long time user. This issue is strongly related to the issue discussed prior regarding the lack of normal

visual and auditory cues that normally accompany face-to-face communication. Most of the participants in the program had no prior experience with online communications and thus had no experience with online etiquette. Participants were expected to connect with each other, and with others in the early childhood community outside the CDA program. The writer felt that this was an important strategy to implement and that students would benefit by learning the conventions of appropriate communications online.

In conjunction with providing guidance in online etiquette, providing specific online suggestions to assist students when facing specific communication difficulties with others (based on three key behaviors identified as the core of collaborative communication by Carl Rogers[1]) can be very beneficial to students efforts at online communication (Zimmer, 1996). Zimmer (1996) states that "flame wars - escalating hostility - are a well-known problem in computer-mediated communication." In the absence of normal body language cues, even the closest of friends can find themselves reading aggressiveness into a post from an other individual, though such hostility may not in fact be intended. Zimmer (1996) suggests that having online suggestions for dealing with different communication difficulties can be very helpful. For example in Zimmer's templates, under the topic "To dissolve perceived oppression." The help message is "Tell me what you want to do here, so I can see your point of view" The writer felt that incorporating and accommodating suggested strategies for dealing with communication difficulties would be worthwhile for the participants of this applied dissertation.

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[1] Zimmer (1996) refers the three behaviors as "open disclosure, warm affirmation and empathetic comprehension" (p.13).

Larner (1993) studied several child care networks and concluded that access should be provided to the technology that is not controlling of students in order to allow the development of support networks. Since one of the goals of this network was for continuation beyond the end of the program, and since all of the participants of the program are adults and working professionals, independence will be an effective model to support. The writer felt that it would be important for the instructor to remain mostly invisible on online discussions.

This concept of independence is supported by Bruffee (1993) and Newcomb (1962) who feel that collaboration should be encouraged between students as opposed to between the student and the teacher. Since the CDA program already emphasized peer-to-peer communication, the use of online technologies appeared to be very appropriate to continue the development of peer-to-peer support.

Newcomb (1962) states,

> The most effective way to help students across these boundaries.... is not direct influence, apprenticeship, or ... collaboration between teacher and student. Teachers have the greatest influence indirectly, when they establish conditions in which students "spend a good deal of time together - particularly... without a sense of constraint- jointly [creating] norms, concerning their common interests, by which each of them is influenced." (P.105)

The writer believed that it would be important not to take on an authority type role in discussions.

The instructor perceived that he would need to be involved as an observer and be available for feedback in online discussions. Since the current and previous classes meet or met weekly and had the opportunity to have discussions involving the instructor, as well as small group discussions without the instructor present, it was expected that at least these participants should be accustomed to peer-to-peer discussions and be able to be successful in using the

Internet communication technologies. This level of involvement by the instructor seemed appropriate, especially considering that one of the long term goals of this program was to develop a permanent online community within the state.

Brown (1993) discusses how students should be encouraged to participate as peers supporting peers, to assist each other in their own zone of proximal development. This is a concept taken from Vygotski (1978) who describes this zone as the difference between what a child can do with help and what he or she can do without assistance. The CDA program relied on peer-to-peer distributed cognition. The use of online technologies in theory would be an excellent extension of this approach. The writer felt that though this is an important aspect of the program, specific attention to this issue would not be necessary since peer-to-peer support already has and is occurring in the ITV environment.

It is important to clearly define to participants of an online community the expectations and the roles of the participants (Fjuk, 1997a; Deden, 1997; Bannon, 1995). Students entering the CDA program frequently expected the teacher to be in the role of information provider and considerable adjustment was often necessary for many students to understand their role in the learner-centered interactive television class room environment. Although this expectation was overcome as part of the CDA program, the writer felt that clearly articulating the expectations of participants for online communication would be important.

As many of the students who would eventually be using Internet communications would have had no prior computer experience, it was almost a certainty that as expectations were provided to the students there would be fear of the artifacts for some students. In order to overcome fear of the technology (which in theory could become greater as students see its value

(Wilson, 1996), students need to receive nonjudgmental assistance (Howard, 1996), easy access, and support to help them feel that they have something to share (Wilson, 1996). Wilson (1996) notes that "the higher someone values the technology the more extreme the phobia can become" (p.816). The writer felt that supporting students until they became comfortable with the technology would be important to the success of the online communications. However, since the applied dissertation was developed entirely with volunteers, this problem did not prove to be significant.

Providing one-to-one support to each student could have created extremely high demands on the instructor. Using public tutorials such as Web pages, or a public bulletin board specifically available to post class questions could be beneficial to alleviating the time demands of providing one-on-one guidance (Paulsen, 1995). The writer believed that there might be about 30 - 35 participants involved in the program scattered across the state. It would be impossible to provide one-on-one guidance to students to assist them with technology issues. The writer believed that the availability of a face-to-face hands on technology class followed by access to an online tutorial (a Web site) for instruction in use of Internet technologies, as well as a bulletin board for posting of questions and answers regarding use of the technology would be important to the success of the program. The writer, however, had some concern about confusion that could occur if multiple bulletin boards were used. He expected that there would likely be several students who would need a high level of personal support and that some "hand holding" would be necessary.

In addition to a discussion board, an online Web-based learner-centered tutorial would be created that could be accessed from any computer connected to the Internet. There are

numerous computers around the state available for public access located in schools, libraries and state agencies, that allowed all students without home or work computers to access the Internet. The writer felt that an online tutorial would work well for the program if combined with a list of access points for students that were located near their work sites and or homes. A similar strategy was used in a training program for early intervention personnel in Utah (Rowland, 1996).

The writer believed that the use of distance technologies by child care providers who enroll in the CDA training program would, in time, be able to address all of the communication issues identified in the problem statement. In particular, the writer intended to rely on participant's use of e-mail and a discussion board. The use of the system by prior program completers around the state would address the first phase of the development of a peer network for members of the Vermont child care community. It was planned that in the event that insufficient numbers of volunteers were available from CDA program participants, invitations would be given to selected child care providers who are in leadership positions around the state. In particular, provider group leaders (of local support networks) and child care trainers would be targeted. It was anticipated that in the second half of the applied dissertation, both of these groups would be invited to participate in the network as a second step in including the child care community at large.

Since most of the individuals who participate would be new to using online technologies, it would be important to provide information about both the actual mechanics of using the technology and positive methods of communicating and developing a learning and supportive community. For participants of the CDA training program, successful implementation of these

new communication artifacts would best be accomplished through an analysis of the current curriculum. Since the current course is already using learner-centered strategies that have proven effective in a distance environment, the writer felt that the greatest need would be to examining what to replace in the current course to prevent an excessive level of work on the part of the students who choose to participate.

Overcoming shyness.

Reducing self-focus for students with social phobia may greatly improve social behaviors (Woody, Chambless, & Glass, 1997; Fischer, 1996). Since students see themselves on the local monitor, this may aggravate shyness and social discomfort by making participants overly focused on their own image (see section II for a description of the ITV environment). By both providing online communication opportunities and by turning off the local monitor (when possible) this problem could be significantly alleviated. As discussed earlier, the instructor of the program had already implemented the use of only the monitor that shows the image from remote sites, thereby removing the ability of students to see themselves except during sessions when the instructor is located at their site. Evaluations of this change were conducted. Results will be discussed in Section V.

The writer felt that it would likely be necessary to provide additional encouragement to camera shy students who chose to participate using online technologies. The result would be that others in the program would get to know who they were and hear their perspectives. Studies have shown that shy students are at first judged to be less intelligent by other class members (Paulhus, 1997). In this interactive television environment there were no other opportunities for students to gain more knowledge of these students and thus this could have been occurring. The

writer felt that encouraging the shy students to communicate in other ways than on camera would be beneficial for the program as well as the shy individuals.

Description of Selected Solutions with Discussion

The writer proposed the following set of solutions as they relate to the causal analysis of the problems identified in section II. The overarching concept revolved primarily around an online Internet-based communication system. Participation in this communication network was voluntary and relied on informal communication between participants. Marmolin (1991) states, "The most important form of collaboration in a distributed design environment seem to be informal collaboration" (p.159). The proposed project connected individuals who have shared interests and common problems and allowed them to engage in discussions about these interests and work related problems. Fischer (1997) states:

> We have learned from our efforts that older frameworks of education--associated with notions of instructionism, memorization, and decontextualized learning--cannot be shaken merely by the presence of technology, whether that technology takes the form of intelligent tutoring systems, multimedia, or world-wide connectivity. New frameworks must instead be devised to support lifelong learning--learning webs that allow integration of learning, working, and collaborating; engagement in authentic problems; self-direction in learning tasks; and creation of new content and domain areas (p.8).

Current and prior students in the current CDA class were invited to use the tutorial and join the discussion board. Since these students have had the same training experience and work in similar work places, the communication between participants was expected to be a comfortable situation. Krause (1991) writes "The degree of difficulty participants will experience in constructing a shared communicative environment will be determined in part by the kinds of relevant information they have about their fellow interlocutors" (p.173).

The writer chose to encourage a network based on a combination of e-mail and discussion groups. Rowland (1996) states "E-mail partners and discussion groups can bridge distance gaps for those in remote areas who feel alone in their struggles" (p.70). Below discussion about the particular problems identified will be discussed in relationship to this solution.

In order to overcome the problem of camera shy students not participating in large group activities and being unknown to other students, local monitors continued to be turned off except at the instructor's site (where the local monitor is needed to view computer generated and other visual material) so that the artifacts of the communication do not emphasize students' self-focus (Kinzer, 1985; Woody, 1997). Online communication systems were established which included e-mail and discussion boards which allowed all interested students (including shy students) to participate in discussions with individuals from distant sites without camera interference. Technology training was made available to students through a face-to-face hands on class, online tutorials, and e-mail support. Multiple sessions were not scheduled as there proved to be no need to accommodate larger numbers of participants. These same assists were available to prior CDA program completers. A goal of the support was to help all students become computer literate and reduce issues of techno phobia.

To provide more time for students to discuss issues that were not fully discussed in class, and to provide opportunities for prior program completers to engage in discussions, online communication systems were be established. Though recommended by Howard (1996), specific online consensus building assignments were not given to current CDA training program participants, to encourage use and familiarity with the systems. A decision was made not to

directly link the discussion board and tutorial with the class, even on a voluntary basis after class discussions resulted in a conclusion that some students who would not have time to participate would feel left out of the system. Students were, however, encouraged to pose their own issues and questions on the discussion board. In order to promote the use of this system beyond the end of the program, the writer/program coordinator will encourage the State of Vermont, Social and Rehabilitative Services, Child Care Services Division to place an ongoing discussion board on their server on a permanent basis for use by child care providers.

Letters were sent to all current and previous CDA program participants describing the online communications opportunity. Current program participants had the opportunity to discuss the program with the instructor during class. Along with the letter sent to invite participants, a survey was included to gather information about each respondents interest in the project, current abilities, and experience with computers and online access.

Current students were encouraged to submit homework assignments that are typed, through the use of e-mail in order to reduce the dependence on the follow-through of students and interactive television technicians to post materials in a timely manner, and to reduce the volume of delayed material slowed in transit through the U.S. Post office.

Online tutorials (see The Family Center, 1998 for URL) were developed that provided step-by-step instructions for using e-mail and, bulletin boards. In addition, online tutorials were developed and posted for use of Internet mailing lists, synchronous chat, Internet search engines, protection from viruses, and guidance for downloading software.

A web page was posted regarding online etiquette as a supplement to in-class discussions. Hyperlinks were created in both the tutorial Web pages and within the discussion

board that provided students guidance on working through online communication difficulties that they encountered. A glossary was created within the instructional Web pages to provide students linked easy access to definitions of Internet and technology terms that they were likely to encounter.

E-mail access to the instructor was made easy through hyperlinks placed within the web page and on the bulletin board. In addition to instruction in basic computer skills and tutorials on the mechanics of using the communication artifacts, help pages were be established to assist students having communication difficulties, based on Zimmer and Alexander's (1996) "empathy templates".

Since most public libraries throughout the state offer free Internet access and are located near participants' work and homes, it was not necessary to map out specific sites available. However, information was distributed to current and prior program participants so that all students would have the knowledge of available access and be able to get online without great difficulties, as was done in a similar project in Utah (Rowland, 1996). This allowed students with no computer access to participate from a location close to their work or home. This was done after interested participants were identified. Participants were informed about various e-mail options including both local Internet service providers, national providers, and free e-mail providers such at Yahoo Mail! to assure that all students can have an e-mail address regardless of individual finances.

Expectations for online communications and available assistance were clearly identified to participants as part of technology instruction. Emphasis was placed on peer-to-peer interactions for Internet communication.

Students were given the opportunity for input in the possibility of substituting some assignments for participation on the discussion board. The decision of the class was not to offer this as an option as it would feel like an exclusive club to those who could not participate for personal reasons.

Report of Action Taken

The initial steps of implementation began in early December, 1997 with conversations with the Director of Child Care Services for the state. She gave her support of the project, in particular with the concept of a discussion board, and that it was "in line" with other goals that had been established by the Child Care Services. The writer joined the Early Childhood Work Group, Communications and Public Awareness Committee (a state subcommittee of the Early Childhood Workforce), where it was decided to organize a sub-committee devoted specifically to communications and technology. In early January this group was enthusiastic about the project and saw it as a pilot project for other possible discussion boards. Approval was granted by the Director of Child Care Services for permission to post the tutorial when ready on the state's Internet server. The following week the project was presented to the CDA Advisory Committee, where it also received strong support.

Early in December, the writer developed a questionnaire to distribute to all CDA students past and present (see Appendix A for questionnaire with results included) to evaluate participant needs and interest. This was submitted to the Executive Director of the Agency for approval prior to distribution.

In order to determine the degree of public access to the Internet, the state's Department of Libraries was contacted. After several phone calls, the writer received an e-mail mailing list

of all public libraries in the state. An e-mail survey was created and sent out to over 200 libraries statewide (see Appendix B for e-mail library survey). Approximately 15% of the libraries responded to the survey. Results indicated that most libraries offered Internet access, but that each library had a different policy for usage and for informal assistance and/or formal training sessions. A determination was made to advise students to contact their local library for information about Internet access if they did not have personal access, rather than to develop a library-by-library database for distribution.

Originally, it was planned to write a grant to fund aspects of the project such as computer training facilities and mailings, however, discussions between the writer and the Executive Director concluded that the time that would need to be invested would not be worth the potential benefit. As a result, no grants were written.

Simultaneous with receiving the support of the Director of Child Care Services, the writer began to explore numerous options for Web page development. Rather than using Netscape Composer, a very basic authoring tool, to create Web pages, AOLpress was selected to create the Internet Tutorial. AOLpress is freeware, meaning that it is available free, not just for evaluation. Online documentation was also available, and the program, rated highly in numerous online reviews, had much greater capabilities than Netscape Composer. For image creation, the writer purchased a copy of Adobe Illustrator and slowly learned to work with the program. To post the Web pages, the author needed to work closely with the Webmaster for the state, as the writer was not permitted to post pages directly to the server. Instead the writer had to send all pages to the Webmaster who would post them. One unexpected problem that occurred was that the writer was using an older 16 bit version of a zip program. This resulted in

file names being truncated. As a result it was necessary to upgrade to a newer zip program which could use the longer file names that Microsoft Windows 95 permits.

Over a period of several months the writer developed modules for the tutorial and posted work in progress so that selected individuals both in the field of multimedia and in the early childhood profession could offer ongoing feedback. Late in February, the first completed modules of the tutorial were posted on the state Internet Server (see The Family Center, 1998 for URL). Although originally planned, it was not possible to post the discussion board on the state server due to a firewall in place. A firewall is a security barrier that prevents individuals located outside a computer networks from writing to the network server. Since a discussion board requires users to write messages which are stored on the server hosting the discussion board, it would not have been possible for anyone outside of the state network to post messages had it been created on the state server. In this case none of the target population was connected within this network. Instead, a discussion board was established on the Nova Southeastern University server with links to and from the tutorial. Plans to move the discussion board to a state server were made and approved with a target date of September 1998 at which time the state expected to have a server established with no firewall available.

Prior to the establishment of the discussion group, the writer used the CDA class that was ongoing at the time to get feedback on student reaction to the concept. During a class on the topic of teaming, the writer/course instructor assigned teams to decide if they would want to include contributing to the discussion board as a part of the class requirements. They were asked to determine what additional information they would need and what concerns they had. Three important concerns arose from those discussions: (1) requiring students without home

access to participate as part of the course would place too large a burden on the students, many of whom worked 50 - 60 hours a week and had families, (2) using the Internet for discussions on a voluntary basis as part of class, in the perception of the students, would create a division of have and have-nots, and (3) that there were concerns about who could access the discussion board and a feeling that password protection would be important to protect privacy. As a result it was decided not to connect the discussion board to the class and to use password protection.

The development of the Web pages went through a series of steps, including development of content, establishing a theme, creation of a logo and title, and actual implementation and posting. All topics originally proposed were created for the tutorial including using e-mail and sending attachments, posting to, and reading from, discussion boards, using search engines to look for resources, establishing protection from computer viruses, using synchronous chat, downloading files, Internet etiquette, using Internet mailing lists, and more.

A child care theme was created. Links to other sites outside the tutorial were placed on a page called "Field Trips"and tutorial units were linked from the "Playroom" and "More Toys" room. An image of a play cube is represented in most pages of the tutorial. The logo was designed to capture both the state image, and the playful image of children (see Appendix C for selected screen captures). The logo included the name "The Collective" which stands for Creating Online Linkages in the Early Childhood Community Throughout Vermont (COLECCTV).

One unusual feature of the tutorial is a section on Internet etiquette called Netiquette with links to a page entitled "Tips to Overcome Communication Roadblocks." On this page, four specific communication difficulties are identified with specific strategies for handling each

in a constructive manner. These tips are intended for use in both discussion boards and Internet mailing lists.

To keep track of the level of times the site is accessed, counters were place on several pages of the Web site. Over a 6 month period, pages received between 187 and 351 visits. Due to difficulties of some individuals to access frames in Web pages, a non-frame version of the site was posted in addition to the frame version. This was a puzzling problem, as all who informed the writer of difficulties accessing the frame version of the site were using state-of-the-art Internet browsers.

Colors were modified during early prototype testing to allow for easy reading by those who might access the site who have some degree of color blindness. To correct this problem, backgrounds of pages where blue hyperlinks would be present were changed from green to gray.

To support those very new to the Internet, throughout the tutorial, italicized links take the user to that word in a glossary of terms. Thus, links were context sensitive as opposed to linking to the glossary and then needing to search for the word in question.

Overall the tutorial was designed so that anyone with access to the Internet who knew enough to access the site would be guided the rest of the way. Very basic concepts were covered including using hyperlinks, setting bookmarks, scrolling up and down the page, and moving forward and backward through screens already visited.

To support child care providers unfamiliar with computers who may wish to participate in the use of the tutorial and the discussion board, a face-to-face introduction to the Internet was planned for child care providers who had no prior experience. Several colleges were investigated with computer/Internet facilities. One centrally located site was selected in the center of the

state. Letters were sent to all participants who had indicated an interest in face-to-face training. Twenty-two individuals had originally expressed interest in the training, with nine more indicating that they were unsure. however, it was clear from other answers in the questionnaire that far fewer really needed basic level training. A lesson plan was provided when the training was announced which made clear just how basic the training would be (see Appendix D for training announcement letter). Seven of ten participants who responded and indicated that they would come to the training attended the half day workshop.

The introduction to the Internet training consisted of learning how to turn on a computer, open a browser, set a bookmark, establish a free e-mail account, post to the discussion board, and to log off of Windows. Basic tools of Windows were discussed and practiced including sizing windows, switching between programs, and minimizing and maximizing windows.

Students attending the CDA class during the time of this applied dissertation were informed of the ability to submit homework by e-mail. This resulted in numerous students using e-mail not only to submit papers, but also to get clarification on assignments and to inform the instructor of inability to attend a particular class. One problem that arose using this format was that during periods when the instructor was out of town for conferences or school, quick response to e-mail became impossible. One student discontinued submitting homework to the instructor via e-mail after this occurred.

Initially only previous and current participants in the statewide CDA program were notified of the tutorial and discussion board (n=88). Much later, during the period from May through September, announcements were placed in 12 child care training newsletters which are distributed to all licensed and registered child care sites in the state (see Appendix E for tutorial

and discussion board announcement). In addition, information was sent to all Head Start education coordinators for distribution to staff. Child Care Services also distributed the information to staff.

Chapter V: Results

Results

The problem identified to be solved during this applied dissertation was that communications systems within the Child Development Associate (CDA) training program conducted on compressed video ITV throughout the state (a) prevented students from collaborating fully with students at other sites; (b) created problems with submission of assignments; (c) limited support network development; and (d) left camera shy students and their perspectives unknown to students at other sites. In addition, at the program's end enrolled providers had no cost efficient and timely way to maintain communications and continue to develop a professional support network. This inability to develop a professional network with peers was mirrored in the statewide child care community.

The overall goal of this project was to improve statewide communication systems among prior CDA credentialed child care providers and current CDA candidates to allow for the development a peer-to-peer support network and a learning community, without regard to distance. A long term goal, which is beyond the scope of this project, is to provide and promote this opportunity to all child care providers statewide. The outcomes identified in Chapter 3 are revisited below.

Outcome 1.

Participants separated by distance will maintain contact during the applied dissertation and develop peer support communities. A minimum of biweekly communication by 85% of students during the program, and an intention indicated by 75% of participants to maintain a support network with members of the group in the program will be considered a success.

This outcome was not met.

Results of a survey completed at the end of the implementation period of the applied dissertation (see Appendix F for final questionnaire with results included) indicated that of 24 responders, nine used the Internet to maintain contact with acquantances, friends or prior classmates. Since these results are from three years of students, the numbers indicated an even lower level of usage in the class that was currently enrolled.

Outcome 2.

Camera shy students from the current class will have interactions with, become known by, and share their perspectives with students at distant sites. At least one method of communicating with participants from other sites on a minimum of a biweekly basis during the applied dissertation will be documented for at least 90% of students who identify themselves as uncomfortable with the camera.

This outcome was not met.

Four students responded to the final survey who indicated that they were either "very uncomfortable" or "extremely uncomfortable" with speaking to the large group on interactive television. Only one of these students indicated that they used the tutorial and the discussion board. This student did indicate that she used the Internet to connect to others in the early childhood field.

Outcome 3.

Participants will develop support networks with participants from other regions of the state. Results of participant and instructor documentation will indicate at least biweekly communications by 85% of the students with students at a distance sites, excluding classroom conversations (for those in the current CDA class).

This outcome was not met.

Of 24 responses to the end-of-project survey, only two individuals indicated that they used the Internet to communicate with others that they already knew. Three participants indicated that they made new connections with others in the early childhood community.

Outcome 4.

All students in the current CDA program will have the ability to submit most homework without reliance on others for delivery, thus creating less opportunity for assignments to be lost or delayed in the mailing process. The number of students submitting homework directly to the instructor will be tabulated. 50% of students who participate in this applied dissertation using a direct method of submission of homework will be considered a success.

This outcome was not met.

Although all students did gain the ability to submit homework online, a review of e-mail contacts and homework submissions indicate that nine of 34 students who were enrolled on the CDA program during the period of the project used e-mail to submit homework on at least one occasion.

Discussion

The four outcomes identified in the prior section represent only some of the facets of this project. There are many other important implications and results that require discussion to understand the full process. The following areas will now be addressed to provide for further interpretation of the results of surveys provided, and of outcomes that were in fact achieved. These areas are: (a) further analysis of the data collected, (b) potential causes of less than anticipated engagement, (c) impacts on individual participants, (d) possible future incorporation of Web artifacts (tools) into the current CDA program, and (e) unexpected outcomes, and possibilities for the future.

Further analysis of the data.

As the project is still in the process of expanding (with such expansion being beyond the scope of this report), preliminary reflections will be drawn from the portion of the pilot group who completed a survey on their use of the tutorial and discussion board, e-mails received, posts on the discussion board, and informal conversations between participants and the writer. The respondent group, however, clearly does not represent the total number of users of the tutorial nor the discussion board. Surveys were sent to 48 prior CDA students who responded to the original questionnaire (see Appendix F for questionnaire results). This included persons who did not express interest in the project in the first contact. A posting was also put on the discussion board asking for volunteers to complete the survey, but no responses to this post were received. Of the 24 who responded to the survey, eight indicated having used the tutorial. This is in contrast with the level of activity at the site as documented by over 200 hundred hits in the first three months, followed by an additional 150 hits over the next three months as measured by

counters on the Web pages. Counters that were placed on pages were compiled on a separate Web page so that the writer would not affect the count when viewing totals. Individual pages were visited at various levels, but at a rate of approximately ½ to 2/3rds of the home page rate (see The Family Center, 1998 for URL). The discussion board had limited activity, with only 39 posts in 6 months in addition to posts from the writer. Data indicates that of those that did use the tutorial, many accessed multiple instructional units and explored the related artifacts further on their own. One respondent indicated using seven different artifacts as a result of the tutorial. Clearly the largest area of change as a result of the tutorial was the use of the Internet to search for resources. All but one respondent who indicated using the tutorial checked this item. Interestingly, the second most checked item was accessing the discussion board. Since no counter was placed on the discussion board, it is not possible to know how many times or how many individuals accessed the site without posting, however, it appears from the data, that it was accessed far more that the frequency that postings were made. One participant, for example, (who did post several times) reported checking the page every other day for months, hoping that others would post messages. It is the writer's belief that three factors worked against the success of the discussion board as a source of peer interactions: (1) the failure due to the limited number of potential participants to reach critical mass; (2) the obstacle of needing to know and remember a password to access the site; and (3) the difficulty that many had with Internet access.

Another interesting piece of data is that of the 24 respondents, 15 indicated having easy access to the Internet. However, of the 13 respondents who reported using the tutorial, only seven had easy access. Similarly, of 10 respondents who indicated using the Internet prior to the

introduction of the Tutorial, only four actually accessed the site. An important question to answer is given that many individuals with easy access did not visit the site, what other obstacles prevented access?

Responses to the end-of-project survey question about why had they not posted at all or posted more to the discussion board revealed that answers varied widely. The line that received the most responses was "other". There were some apparent themes, however. Overall, the main reasons for little or no posting appeared to be primarily related to (a) insufficient time, (b) feeling less than competent in using the computer and the Internet, and (c) not having anything to specific say. This leads the writer to the conclusion that two areas may have had a negative impact on the level of engagement: (1) marketing of the site may have been insufficient in relation to the obstacles that access presented to the target audience, and (2) absence of a project, such as would have occurred through linking the discussion board to the CDA class , left users without a focus or motivation for discussion.

Marketing.

Marketing can imply many aspects of involving an audience in a product or service. In this case, receiving notification about the site on two occasions, as well as having discussions in class (for those who were currently attending the CDA program) appear not to have been sufficient to motivate large numbers of potential participants to take what may have been perceived as enormous steps to them; to take part in the project. It appears that at least several potential participants either forgot that the site was there or forgot how to access it. This was particularly true for those who received the information when they did not initially have computer access (and therefore would have not felt the information very relevant to them), but

gained computer access later. The writer believes that many of those individuals who received information before they had access or during a family or medical crisis (of which several occurred), did not keep track of the information for later retrieval.

A second area of concern regarding marketing relates to recommended guidelines for leading change events involving technology in particular. One such guideline is to involve of all individuals early in the designing stages of any plan for innovations that may effect them (Penrod, 1993). The focus should be not on individuals, but on the social interactions between people (Ogawa and Bossert, 1995). This model of involvement could have modeled the interactions desired on the discussion board. Branson and Hirumi (1994) state that innovations have failed in education due to lack of involvement with stakeholders. Rhodes (1994) describes an educational plan for innovation, that despite otherwise ideal conditions, failed over the long term due to lack of inclusion of the community in the process (Rhodes, 1994). It is a leader's responsibility to direct the process so that all constituents are invited to be participants and to empower them in the process of planning change in a non hierarchical way (Lewis & Farrell, 1995; Harris, 1995). In this project many of these aspects were included; support and input was garnered from the CDA Advisory Committee, the Executive Director of the Agency where the writer was employed, the Director of Child Care Services, and from many others. In addition, students in the ongoing CDA class were organized into teams during one session to provide input into the process at a very early stage. What did not occur that in retrospect could have had significant impact on the outcome was the formation of a committee consisting of both current and prior CDA students, representatives from Child Care Services, Head Start, and the state department of education early childhood division, as well as other potential stakeholders, to act

as an advisory committee throughout the entire development process. This could have resulted in additional ideas such as other tutorial features that could have attracted new users, as well as general enthusiasm of the participants being spread to their associates in the field. In the same way that early adopters of technology lead the way for others to become interested in technology, an advisory committee could have lead the way for others in the child care field around the state to participate.

Gender and the Internet.

There is yet one other issue that deserves consideration when discussing low engagement levels: gender. About 99% of those in the field of early childhood in the state are women. According to the Center for Women and Information Technology (1998), women are very under-represented as users of Internet technologies. Because of this the center expresses the concern that "women unable or unwilling to use information technology will have little power to shape that information and, in fact, are in danger of becoming the new illiterates, unprepared for the opportunities and challenges of the Information Age." There are parallels to levels of users, in the level of participation of women who are enrolled in technology fields at universities. Whereas over the past two decades there have been significant increases in women enrolled in math and science courses, the number of women enrolled in information technology related fields has declined significantly (Center for Women and Information Technology,1998). This national trend of women being under-users of new Internet technologies illustrates an obstacle that needed to be overcome to develop large scale engagement.

The writer speculates that those women who choose to work as care givers in early childhood may in fact represent a population that is attracted by more traditional living (non-

technological) than women who work for corporations or other competitive businesses. Thus the likelihood of using technology, already low among women as a group, may be even more highlighted in this segment of the population. Unfortunately, the writer knows of no research to support or refute this idea.

Individual impact.

Though the survey does not show large numbers of participants taking advantage of the resource provided, it is important to present some of the anecdotal reports from users that were submitted, sometimes unsolicited, along with the final survey. The development of the Tutorial in particular, provided a gateway for quite a few individuals to experience the Internet in some cases for the first time, and in other cases in new ways. One participant wrote "The info from the tutorial was invaluable - most of what I needed in one place - I am signed up to 5 list serves (Internet mailing lists) at the moment plus I found several for my daughter who wants to study deaf education." Other comments included "I love e-mail!", and "It was a great tool, I still visit the tutorial and discussion board regularly", and "...your tutorial came along at a particularly opportune time, as it turns out - with international impact! Wow!" This last comment was referring to connections made with individuals across the world and resulting relationships that developed as a consequence of her involvement with an Internet mailing list. Yet another participant wrote, to tell me that she discovered another Internet mailing list that was not listed in the tutorial, while noting that she would never have discovered any of them without the tutorial. Conversations with several participants indicated significant use of the resources on the Field Trips page including links to Internet mailing list subscriptions and disability information sites.

Blending technologies into the CDA program.

As the writer first began this project, he envisioned a blending of the interactive television medium with Web resources including using search engines for research, e-mail, and discussion boards, for facilitation of dialogue among learners beyond the parameters of regular class time. As a result of conversations with students and the executive director of the agency, the writer came to the conclusion that placing demands on the students of the CDA program that would require their participation in the discussion board and other Internet related tools would have created overload for many of the students, possibly resulting in high dropout rates and program failure. The risk of this would have been quite high. The current drop rate of 3% has remained consistent for the entire 10 credit sequence for three years. It is a success that is not worth the risk undermining at this time. It is the writer's belief that until a time comes when most child care providers have access to the Internet from their homes, or funds become available to connect those child care providers who enroll in the statewide CDA to the Internet, this is not a feasible option. The writer does strongly believe, however, that the blending of Internet technologies with the course when it becomes possible with have tremendous benefit. Paulsen (1995) states "Computer conferencing, when integrated with other media, can be the means of joining freedom and unity into truly flexible, cooperative distance education programs."

This connection of the Internet to class learning tasks was not a possibility with this project. Yet, simply providing the tools to communicate in this situation was not sufficient. A project with relevance and need for collaboration was needed to generate energy . This lack of linkage to a project, combined with very poor access among child care providers proved a

formidable obstacle. Even with public access points scattered around the state, some students could still have to travel 20 to 30 minutes each way to a local library with computers, and then there was no common project or immediate task that needed to be accomplished. Long work hours and family responsibilities prevented many participants from using public forms of access. This lack of a project further certainly lessened the likelihood of large scale participation.

Despite a growing number of individuals and families that continue to connect to the Internet both statewide and nationally, child care providers appear to be a group that is slow to gain access to the information age. Only time will tell if the interactions on the discussion board will become dynamic with larger numbers of users. However, if the existing early childhood Internet mailing lists provide the linkages necessary for local providers, and this project supports the community awareness of this resource, then the goal of creating linkages within the state community (and beyond) will have been achieved. Unfortunately it does not provide for the hoped for linkages with the students in the statewide CDA class.

Unexpected outcomes and possibilities for the future.

In part, as a result of the posting of the tutorial, in combination with the writer's involvement with the Technology subcommittee of a state established Child Care Services Communication and Public Awareness Committee, the state's Child Care Services Division is moving towards the permanent establishment of an Internet mailing list and other potential discussion boards. In addition, this project has been presented at the National Association for the Education of Young Children's (NAEYC) annual conference as well as at other regional meetings and conferences. The result has been numerous requests from other early childhood

organizations nationwide to link to this site. Though linking to another site does not require permission, it is courteous to inform the site's owner or creator.

The agency where the writer works to date has no Web site, however, this project has moved discussions to the forefront and plans have been established for the Public Relations Committee (on which the writer is a member) to have guidelines established, a template created, and an Internet service provider identified during the first half of the coming year. It is the writer's belief that the tutorial can act as a gateway to the agency home page, and visa versa.

Another unexpected outcome of the project was that it was viewed as a benefit by local funders of the CDA program. At the time that this project was being developed, the federal grant that had been funding the CDA program was ending and local support was required. As part of the public relations package that was developed, information about the development of this project was included. Although there is no way to separate out all of the details of the applications submitted, each agency viewed this project favorably and funding was secured.

Recommendations

The writer's recommendations to others who may desire to establish a community of peers through Internet technologies are as follows:

Begin by generating support in the community you wish to connect so that they become the leaders in the effort and generate enthusiasm for the project. Include a diverse group of people, both those who will likely be involved in the community as well as those that may be able to offer financial, technical, or other support along the way.

Early in the process identify your Internet Service Provider and be sure that the discussion board that they can offer is not behind a firewall. Any provider whose server is behind a firewall will prevent anyone outside of the system from posting to a discussion board.

Link the discussion board (or other communication artifact) to a special project to launch the undertaking. With no clear focal point, it is much more difficult to motivate people to overcome their resistance to the technology and to engage with the new medium.

Find ways to provide home or work access to as many people as possible to make involvement in the project more feasible and likely. This may mean writing grants, researching local access points, getting contributions from computer manufacturers or resellers, or a combination of two or more of these approaches.

Plan to send out regular mailings or to include information in multiple newsletters to provide regular reminders that the program exists and how to participate. People are ready to learn technology at different times and if the information is not provided when they are ready, an opportunity may be missed.

Avoid password protection unless it is absolutely necessary as this will create an additional obstacle for new people to join the conversation. Explore other methods to protect privacy as needed.

Provide face-to-face beginner training at various locations on a regular basis to help those who are new to computers. End each session with an assignment that will connect them outside of the training environment.

Dissemination

Information has been provided about this project in the form of an spotlight session at the 1998 National Association for the Education of Young Children's (NAEYC) annual conference in Toronto. . Applications will be filed to present at NAEYC's annual conference in 1999 in New Orleans.

An article submitted by the writer that discusses the Web design process for this project has been approved for publication in a spring/summer issue of The International Journal of Continuing Engineering Education and Life-Long Learning, published by Inderscience Enterprises based in Geneva Switzerland. The writer will submit this paper to ERIC for possible inclusion in their database which is accessible at many universities around the country.

Information will be presented to other Instructional Technology and Distance Education students while at Nova Southeastern's Summer Institute, as part of regular applied dissertation sessions. The format of these presentations is still under development.

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APPENDIX A

INITIAL QUESTIONNAIRE WITH RESULTS INCLUDED

Date

Dear current or prior CDA program participant:

Agency name and address here

I am writing to tell you about a new opportunity that will be made available to you sometime in the next several months. I will be developing an online communication system statewide in collaboration with The {Agency name here}, and Child Care Services Division of the state of {name of state}. Through the use of the Internet this project will provide an opportunity for those who work in the field of early childhood in {name of state} to develop, renew and/or strengthen relationships with others in the field. In addition, a wide array of resources available on the Internet will be available and easily accessed.

Here is how it will work.
The plan is to begin with the current and prior CDA participants, in the {agency name here}'s training program, and then over time to expand the availability to others in the early childhood community. *Free basic computer training* for those with little or no computer experience will be offered. In addition, an *online tutorial* will be created to help people learn how to use the communication methods that the Internet offers. A *discussion board* will be established that will allow participants to post and read messages to and from others involved in early childhood. This will provide opportunities for problem solving, sharing resources, personal chat and what ever else seems appropriate to the people using the discussion board. In addition, information will be provided for participants to get a free e-mail address for more personal correspondence with friends and professional acquaintances.

If you don't have a computer you can still participate!
A map of available computers at libraries, schools and other public places will be created. You do not need to have your own computer nor do you need to purchase access to the Internet.

A survey is enclosed.
I need to determine who will be interested in participating and what experience and skills individuals have (or don't have) with computers. You do not need to be computer literate to participate in this program: we will teach you the skills you need. I have enclosed a questionnaire for you to complete. I would sincerely appreciate it if you can take a few moments to complete this and return it to me as soon as possible. Even if you are not interested in participating at this time, I'd appreciate your feedback.

I will be assisted by faculty and staff from Nova Southeastern University. Successes with the communication will be shared with colleagues and faculty in early childhood and distance education programs at Nova where I am a student.

Feel free to contact me if you have any questions.

Sincerely,

Steve Stahl

The {Agency name here}
Statewide Early Childhood Communications
Project Survey

Please return your completed survey to:
Steve Stahl
The {Agency name here}
address
city, state zip code

Please check the appropriate box for each of the following questions.

	EXPERIENCE	Yes	No	Not sure
1	I have had some experience using a computer recently. *(if "No" skip to #12)*	41	4	0 n/a=-4
2	I am comfortable using a mouse.	41	0	2 n/a=-6
3	I have some experience using e-mail.	22	21	0 n/a=-6
4	I have browsed the Internet at least a little bit.	27	15	1 n/a=-6
5	I am very comfortable with e-mail and using the Internet.	15	21	5 n/a=-7
6	I have a computer I can access at home or work. *(if "No" skip to #10)*	39	9	0 n/a=-1
7	The computer I can access is connected to the Internet. *(if "No" skip to #10)*	27	14	2 n/a=-6
8	I use the following Internet Browser: 11 Netscape, 6 Internet Explorer, 6 Other, 6 Unsure			
9	I use the following e-mail program: 1 Eudora, 0 Netscape Mail, 9 Other, 11 Unsure			
10	I have a friend or family member nearby with a computer connected to the Internet that I can access. *(if "No" skip to #12)*	Yes	No	Not Sure
		18	12	3 n/a=16
11	The computer I can access is a:	28 PC	3	Macintosh

Please answer questions on reverse side.

	INTEREST	Yes	No	Not Sure
12	I would like to participate in a free hands-on computer workshop for beginners.	22	15	9 n/a=- 3
13	I would be interested in connecting to others in the early child care field using the Internet and would like to participate in this opportunity. *(if "Unsure" please share your concerns in the comments section below)*	32	5	11 n/a=- 1
14	I am willing to go to a local library, school or other place outside my home to participate. *(If you already have Internet access in your home or work, leave blank.*	15	4	5 n/a=- 25

15. If you know of any locations near your home or work where public access to the Internet is available, please list locations here:

16. What concerns, comments or suggestions do you have?

Name: _____ **Work tel:** _____

Address: _____ **Home tel:** _____

_____ **fax (if avail):** _____

_____ **e-mail (if avail):** _____

Town where you work: _____

Thank you for your time completing this survey.
Steve Stahl

Note: In results section, n a = no answer

APPENDIX B

LIBRARY SURVEY INSTRUMENT

LIBRARY SURVEY INSTRUMENT

Hello:

I am in the process of setting up a communication system statewide for members of the early childhood community. Many of the individuals who may wish to participate in using an online tutorial, e-mail and a discussion board do not have access to the Internet from their home. I wish to collect some information that I can share with those who may be interested from your community. Could you please complete the short questionnaire below? I have put some additional information at the end of this posting about myself, my organization the (agency name) and the project. Thank you in advance. Please e-mail your response to the sender (sstahl@together.net).

Steve Stahl

1. Is computer access to the Internet available to the public at your library? (If the answer to this question is no, skip to question #9)

2. Name of Library:

3. Street Address

4. Town

5. Telephone

6. Hours open: M- T- W- Th- F- Sat- Sun-

7. Do you offer any basic computer or Internet workshops?

8. Is there any other information that would be helpful for potential users to know?

9. Are there any other sites in your area that offer Internet access? If yes, where?

****

Background information:

I, Steve Stahl, am the Child Development Associate (CDA) Training Program Coordinator at The {agency name} in {city}, {state}. In an effort to create a support network among child care providers and others in the early childhood field in {state}, I am creating an opportunity for those who are interested to learn how to use the Internet for peer to peer communication as well as for access to resources via the Internet. Free face-to-face training will be offered in basic computer skills and an online tutorial is being created for those who are able to access a web site on the Internet.

This project is being conducted by myself as part of a practicum experience for doctoral work through Nova Southeastern University. The Child Care Services Division of SRS is offering space on a state server for the Web pages and a discussion board. By providing information about community public access to the Internet many child care providers may avail themselves of this opportunity.

The program is being offered as part of {agency name}'s child care training program currently offered statewide via {name of state} Interactive Television. Initially 90 child care providers who have or are participating in the program will be notified about this opportunity. Many of these people have established friendships with other child care providers through the class but have had up til now no opportunity to maintain cost effective contact with those at a distance. Over time, additional members of the child care community will receive notice of the availability of an on-line child care community support network.

If you have any questions, please don't hesitate to contact me.

Steve Stahl
The {agency name}
address
phone number

APPENDIX C

TUTORIAL SCREEN CAPTURES

Screen capture: Top of opening screen in tutorial. From this page users must proceed to the Overview page.

Welcome to

Creating On-Line Linkages in the Early Childhood Community Throughout Vermont

(COLLECTIV)

Provided by
The Family Center of Washington County, Child Development Associate (CDA) Training Program
in conjunction with The Child Care Services Division of the Vermont Department of Social and Rehabilitation Services

Internet Instruction Guide

BEST COPY AVAILABLE

Screen capture: Second page, Overview, which provides both an overview of the site and basic instructions in topics such as hyperlinks and bookmarks. From this page users may proceed to any unit in the tutorial.

Welcome Page

Overview

Playroom

More Toys

Glossary

Field Trips

Quick Index

E-mail the Instructor

Welcome to

The Collective

Creating On-Line Linkages in the Early Childhood Community Throughout Vermont

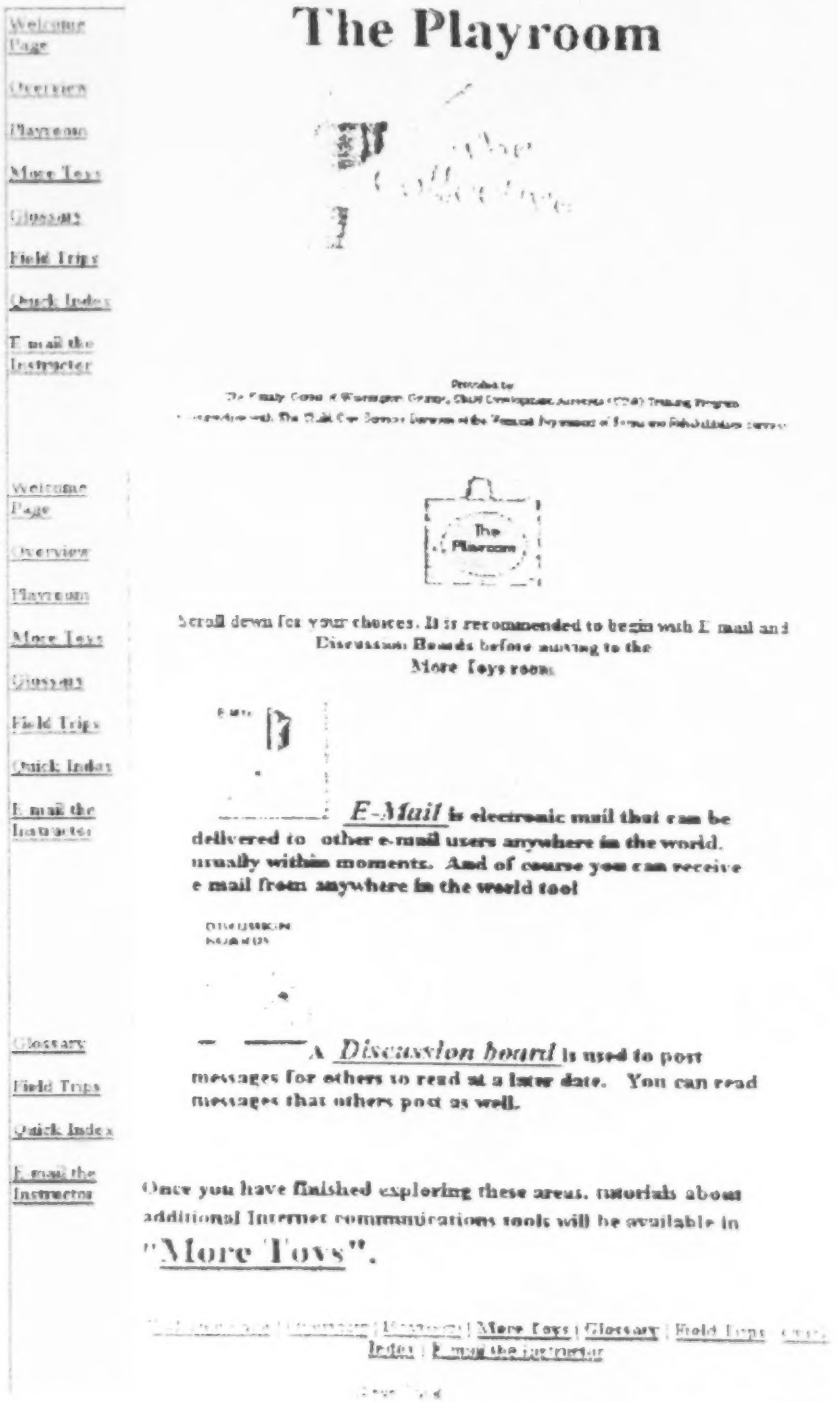
(COLLECTIV)

Tutorial Overview

Tutorial Topics | Using Links | Glossary Link

BEST COPY AVAILABLE

Screen capture: The Playroom which links to two units, e-mail and discussion boards, as well as to the "More Toys" page.



Screen capture: E-mail Tutorial. This is the format used for each unit of instruction.

BEST COPY AVAILABLE

Overview
E-M
Overview
Discussion
More Toys
Glossary
Field Trips
Quick Index
E-mail the Instructor

E-Mail

A. Description

E-mail means electronic mail. To send and receive e-mail you must have access to an *Internet Service Provider* (ISP). When you send an e-mail from your computer, it is first sent to your ISP, from there it travels via the telephone lines through various relay stations to the ISP of the person who will receive the e-mail. Click to see a DIAGRAM.

If you are sending mail from a computer at a public library or school, they already have an Internet Service Provider.

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Screen capture: Middle of the More Toys room. Each image links to a tutorial on that subject in the same format as the E-mail Tutorial (see previous page)

Welcome Page

Overview

Playroom

More Toys

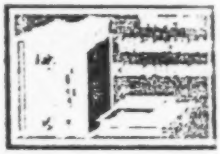
Glossary

Field Trips

Quick Index

E-mail the Instructor

In association with The Child Care Services Division of the Vermont Department of Social and Rehabilitation Services



You can access information about almost any topic on the *World Wide Web*; download children's software, learn specific disabilities, find airline schedules, or tour a museum.

Chat **allow you to talk to people around the state or around the world with out a long distance call. Its all in real time, but you don't talk, you type.**

A *list serve* distributes list member e-mail to everyone on a list (the whole class) at once! There are several early childhood list serves that have some very lively and helpful discussions.

Using a Listserv

Overview | Playroom | More Toys | Glossary | Field Trips | Quick Index | E-mail the Instructor

Home Page

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Screen capture: Glossary. Each item in the glossary is linked to an italicized word within the rest of the Web site.

Welcome Page

Overview

Playroom

More Toys

Glossary

Field Trips

Quick Index

E-mail the Instructor

Glossary

Creating On-Line Linkages in the Early Childhood Community Throughout Vermont

(COLLECTIV)

Provided by
The Family Center of Washington County, Child Development Associate (CDA) Training Program
in conjunction with The Child Care Services Division of the Vermont Department of Social and Rehabilitation Services

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Welcome Page

Overview

Playroom

More Toys

Glossary

Field Trips

Quick Index

E-mail the Instructor

A

Alt-Tab Pressing these two keys together will switch to other open programs on your computer. For example if you have an Internet browser open and a word processor, you may switch back and forth easily with these keys. Hold the Alt key down and press Tab repeatedly to select the program that you want to be displayed on your screen. If only one program is open, these keys will not function. Note: This key combination does not apply to Macintosh computers.

It is possible to have multiple browser windows open at one time. Using the Alt-Tab combination will allow you to switch between windows easily.

Attachment An attachment refers to a file that is sent along with an e-mail. Any type of file may be sent as an attachment including letters, programs, spreadsheets, and databases.

Back to top of page

B

Back Button: On your browser you may go back to previous pages that you have visited. Each time you click the "back" button you will go back one page in your progression. Similarly you may press the forward button to go forward to pages that you

BEST COPY AVAILABLE

Screen Capture: The Field Trips Page provides links to other sites. Clicking on any link to another site on this page takes users to that site they do not remain in the frames of the tutorial.

Welcome Page
Overview
Playroom
More Toys
Glossary
Field Trips
Quick Index
E-mail the Instructor

This page was last updated: 08/26/98 23:09:08

Field Trips Page

(*Links* to other Web sites)

Creating On-Line Linkages in the Early Childhood Community Throughout Vermont
(COLLECCTV)

Discussion Boards | Listserves | Search Engines | Chat Programs | Early Childhood Sites | Disability Information | Vermont Links | Other Tutorials | Software for Download | Virus Protection

Welcome Page
Overview
Playroom
More Toys
Glossary
Field Trips
Quick Index
E-mail the Instructor

Note: Links on this page will leave the tutorial. Use the Back key on your browser to return or use your *bookmark*

If you have recommendations of other Web sites to include on this list please send them to the "Instructor"

Discussion Boards:

Note: Once you get to a site below, you will likely need to scroll down the page to get to the actual discussion areas

- The Collective - Creating Online Linkages in the Early Childhood Community in Vermont (COLLECCTV). This is the discussion board connected with this Tutorial. For all those working in the early childhood field in Vermont. This site is password protected. Contact the "Instructor" for a password. Please provide the name of your worksite and your job title. All requests are confidential and addresses will not be shared.
- ADHD and Parenting
- Parenting
- Birth Defects Discussion
- Arc of the United States Discussion Board
- Family Village Discussion Boardhttp://TheArc.org/wwwboard/wwwboard.html
- Parents Place - Hundreds of chat rooms listed by topic

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APPENDIX D

ANNOUNCEMENT OF BASIC COMPUTER TRAINING OPPORTUNITY

date

Dear

Agency name and address here

In your response to the survey, you indicated that you may like to participate in the hands-on face-to-face computer training. I would like to invite you join me for this free session. The workshop will occur on Saturday April 11 from 9:30 to 12:30 at {name of} College in {town name}. The site selected was chosen based on central location of those interested and on the availability of a computer lab.

If you find that the time and location of this free training session is not convenient, you may wish to contact your local library for assistance. I have discovered that many libraries offer not only free access to the Internet, but basic Internet training as well. Sometimes this is offered on an individual basis and sometimes in a small group. Often this is a free service. If your closest library does not offer any training, the librarian may be able to suggest a library nearby that does. I also may be aware of some options in your area as well.

If you feel that you already have basic computer skills, you may access an online tutorial at the following Internet address: http://www.state.vt.us/srs/fcwc/fcwchome.htm If you already know how to access and navigate this site and have, or can set up, an e-mail account (instructions in the tutorial), then this training session may not be beneficial for you. I am including an outline of what the training will cover below so you may decide if this training will meet your needs.

Outline of Face-to-Face Training

By the end of the session participants will have:

* Discussed the mechanics of logging into the Internet
* Logged on and off the computer
* Practiced double clicking, single clicking, and click and drag
* Opened an Internet browser and found several Web sites
* Clicked on a hyperlink and then returned to original Web page
* Practiced solving some common Windows and Internet problems (what ever we encounter)
* Opened a personal e-mail account (on Yahoo Mail) and sent a message to a classmate
* Opened the discussion board and read the welcome message
* Posted a message to the discussion board (voluntary).

Please complete the enclosed post card ASAP to let me know if you plan to attend. Feel free to call me at 000-000-0000 if you have any questions. If I miss your call I'll call back.

Please note that your participation in this training, or on the discussion board will result in no obligation on your part. The decision of how much time you want to spend on-line is totally up to you. Also, the tools we will be using will allow you to participate when it is convenient for you. There is no need to be on your computer at the same time as someone else.

Sincerely,

Steve

BEST COPY AVAILABLE

APPENDIX E

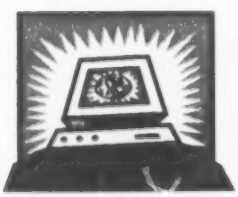
TUTORIAL AND DISCUSSION BOARD ANNOUNCEMENT

BEST COPY AVAILABLE

An opportunity to learn to use the Internet and to be able to communicate with others in the early childhood community is now available!

- ★ You do not need to have a computer.
- ★ There is no cost involved.
- ★ You can use it anytime day or night
- ★ It is designed to be usable by beginners

Communicate with others in early childhood !!



Learn to use the Internet

An online tutorial has been created by Steve Stahl of The {Agency name here}, in cooperation with Child Care Services Division of SRS to provide members of the early childhood community in {name of state} with the opportunity to learn to use the communication tools and resources of the Internet. In addition, a *discussion board* has been established to enable you to communicate with others in early childhood without regard to distance.

If you have never been on the Internet and/or you do not have a computer, many local libraries now offer free access and in many cases free basic Internet instruction. Call your local library to find out what is available in your area. Once you are logged on, the Tutorial will be all you need, plus perhaps a few pointers on how to use a mouse to move around the screen.

Once you are logged into the Internet type in the following address: **www.state.vt.us/srs/fcwc/fcwchome.htm** Be sure to type it exactly, use only lower case letters and be sure that the slashes go the correct direction. Once in the Tutorial, with a little exploration, you will find a link to the discussion board. The discussion board will allow you to read and post messages, questions, or ideas for others seeking assistance. To access the discussion board, contact your local child care training site for a password.

APPENDIX F

FINAL QUESTIONNAIRE WITH RESULTS INCLUDED

The {Agency name here}
Statewide Early Childhood Communications
Project Survey (Results Included)

Please return your
completed questionnaire to:

Steve Stahl
****
****
****

or fax to:
*** *** ****

The following questionnaire will be used to evaluate benefits received and obstacles encountered by users and potential users of the Internet Tutorial and the accompanying discussion board created by Steve Stahl and posted collaboratively by The {Agency name here} and the Child Care Services Division of the state Department of Social and Rehabilitation Services.

A goal of the Internet communications tutorial and discussion board is to promote easier collaboration and communication among the early childhood community in {the state}. This project is ongoing and any additional comments or suggestions to improve the system will be considered carefully. The results will be tabulated as part of Steve Stahl's final report on his applied dissertation at Nova Southeastern University. Your responses will be greatly appreciated.

Questionnaire

(total responding = 24)

1. Prior to the Family Center's Internet project (February, 1998) I had (please check all that apply):

- 4 never used a computer
- 10 used the Internet at least 5 times
- 9 an e-mail account
- 1 subscribed to an early childhood List Serv
- 1 used a text-based chat program
- 0 used a discussion board
- 12 searched the Internet for resources on more than one occasion

2. I currently have easy access to a computer connected to the Internet in my home or at my work site. 15 yes (If yes, skip to # 4) 7 no

3. I plan to get connected to the Internet:

- 4 in the next 3 months
- 2 in the next year
- 3 I have no plans at this time.

4. I have accessed the Family Center's Internet Tutorial (the Collective) (check all that apply)
__11_ never (if you check this box, skip to #7)
__10_ from home
___0_ from work
___3_ from a public access point such as a library :1 (included in 3) from mother's house (written in)

5. As a result of using the Tutorial, I (check all that apply)
___4_ opened an e-mail account
___7_ searched the Internet for resources
___3_ subscribed to a listserv (even if only briefly)
___5_ checked the Collective Discussion Board for messages
___2_ posted to the Discussion Board
___2_ communicated with others I already knew in the early childhood field
___3_ have made new connections with others in the early childhood field
___4_ other - please describe:(links) (checked it out) (didn't use it)
___1_ none of the above

6. I found the following pages of the Internet tutorial to be valuable to me (check all that apply):
___2_ E-mail tutorial
___6_ Discussion board tutorial
___4_ List serv tutorial
___4_ Using search tools
___1_ Netiquette
___2_ Field trips
___2_ Protecting against viruses
___1_ Overcoming obstacles to communication
___1_ Glossary
___4_ None of the above
___2_ I would have liked more information on (curriculum) (all of the above)

7. I communicate with peers using e-mail or other Internet technology (check all that apply):
___4_ Just to chat
___6_ For help or to give guidance with specific childcare or family relations/support issues
___7_ For friendship
___6_ To engage in discussions relating to the field of early childhood.
___8_ To maintain contact with acquaintances, friends or prior classmates
___5_ To meet new people in early childhood.
___2_ Other (to get curriculum ideas) (business contacts) (research)
__10_ None of the above (if this line is checked, skip to #9)

8. On the average I communicate using the Internet (e-mail, listserv, or chat) with a friend or associate in the early childhood field:
___7_at least once a week
___2_at least once every two weeks
___2_at least once a month
___3_rarely

9. I have checked "the Collective" discussion board for messages (check all that apply):
___13_never
____4_once
____3_2 - 5 times
____1_over 5 times
____2_at least once every two weeks

10. I posted a message to the discussion board:
____once
___2_more than once
___20_never

11. The reason that I never posted or did not post more often was:
___6_I didn't have anything I wanted to say
___1_I was waiting for others to post messages
___4_Accessing the Internet was too difficult for me.
___4_I never really understood how to post a message
___6_I didn't have time
___1_It felt uncomfortable
___8_other (please describe) -(didn't know about it) (no need I get support from coworkers and others locally) (could not access through my ISP) (threads never seemed to get going) couldn't think of anything to ask) (I have not gotten to know my computer yet).

12. I would be comfortable in removing the password protection to encourage more widespread use of the discussion board. ___6__ Yes ___1__ No ___10__Unsure

13. I was a prior participant in The {Agency name here} CDA Program __19___Yes _____No (if No, skip to question 15).

14. I found that turning off the monitor at the local VIT site during classes when the instructor was not present:
___4_made me more comfortable participating in discussions
__14_really didn't matter to me
___1_detracted from the class

15. I would consider my comfort level in speaking in the large group in an interactive television environment to be: _12_ comfortable, _8_ slight discomfort, _3_ very uncomfortable, ___1__ extremely uncomfortable.

16. I would like to add the following suggestions/comments:

The info from the tutorial was invaluable - most of what I needed in one place - I am signed up to 5 list serves at the moment plus I found several for my daughter who wants to study deaf education;
Visit sites early in the first semester to make people feel comfortable;
If I was connected at home I would have accessed the tutorial frequently;
It was a great tool, I still visit regularly;
Keep the CDA course available- it is valuable beyond measure - It has helped me both personally and professionally;
I would like the chance to take the program;
I am not comfortable speaking in large groups, so the television was not a big issue;
I had no time to learn the computer;
I needed a slower pace in the face-to-face session.

Name optional

_____

Thank you!